

Application No. 09/743,612

AMENDMENTS TO THE CLAIMS

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Claim 1 (amended): A chromatographic quantitative measurement apparatus for measuring concentrations of at least one analyte contained in liquid sample, comprising:

a chromatographic strip ~~with having one or a plurality of reaction areas, each of said plurality of reaction areas~~ materials comprising a test sample loading area, a labeling reagent holding layer, an absorption layer and a reaction layer, wherein said reaction layer includes a plurality of reaction areas retaining binding reagent that ~~can take on~~ is capable of coloration by a specific reaction with said at least one analyte; and

Q1 a coloration level measuring means to conduct quantitative measurement with numerical expression on coloration level of at least two or more reaction areas out of said plurality of reaction areas, wherein said reaction area is formed so as to cover said reactive layer or disposed uniformly over said reactive layer in a spot or dot shape, and wherein said coloration level measuring means have a function of conducting ~~at least one~~ or both measurement of an optical measurement and an image measurement of said coloration level of the coloration that occurs in the specific reaction between said binding reagent and said analytes.

Claim 2 (original): The chromatographic quantitative measurement apparatus according to Claim 1, further comprising a computation processing device, said computation processing device having a computation process for processing measurement result of said coloration level and deriving the concentration of said analytes in the numerical expression.

Claim 3 (amended): The chromatographic quantitative measurement apparatus according to Claim 1, wherein said chromatographic strip includes a sheet-like solid support and at least one reactive layer superimposed on said support, ~~wherein said reactive layer has said plurality of reaction areas disposed on said reactive layer uniformly~~ support; wherein said reactive layer has wettable materials that ~~can be~~ are capable of being moistened with said liquid sample; wherein said binding reagent is contained in said wettable materials; wherein said binding reagent reacts with substance containing said analytes to undergo coloration reaction;

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and wherein said coloration level measuring means ~~to have~~ measures coloration condition ~~measured over said plurality of reaction areas disposed on said reaction layer uniformly.~~

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Claim 4 (amended): The chromatographic quantitative measurement apparatus according to Claim 1, wherein said chromatographic strip includes a said sheet-like solid support, ~~a support and said wettable materials comprising said~~ test sample loading area, said a labeling reagent holding layer, at least one reactive layer and said absorption layer, ~~layer;~~ wherein said labeling reagent holding layer, at least one reactive layer and absorption layer are, respectively, disposed on said support; ~~wherein said reactive layer has said plurality of reactions areas;~~ and wherein said liquid sample passes through said test sample loading area, said labeling reagent holding layer, said at least one reactive layer and said absorption layer successively in this order.

Claim 5 (amended): The chromatographic quantitative measurement apparatus according to Claim 1, wherein said ~~plurality of reaction areas includes~~ include at least one reaction area of a plurality of dot-like areas and a plurality of spots-like shaped reaction areas; and wherein said coloration level measuring means measures a coloration level of said at least one reaction areas.

Claim 6 (amended): The chromatographic quantitative measurement apparatus according to Claim 1, ~~wherein said chromatographic strip includes at least one reactive layer;~~ and wherein said ~~pluralities of reaction areas are disposed all over~~ area is formed so as to cover said reactive layer.

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Claim 7 (amended): The chromatographic quantitative measurement apparatus according to Claim 1, ~~wherein said chromatographic strip includes at least one reactive layer;~~ wherein said reactive layer has wettable materials ~~to allow~~ which are capable of being moistened with said liquid sample ~~to be moistened;~~ wherein said binding reagent is contained in said wettable materials; wherein said ~~plurality of reaction areas are disposed all over~~ area is formed

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so as to cover said reactive layer; and wherein a concentration of said binding reagent in said wettable materials are consistent in all areas of said plurality of reaction areas.

Claim 8 (original): The chromatographic quantitative measurement apparatus according to Claim 1, wherein said coloration level measuring means includes at least one device selected from the group consisting of a device to read an absorption signal corresponding to said coloration, a device to read a reflection signal of said coloration and an image analyzing device equipped with CCD.

Claim 9 (amended): The chromatographic quantitative measurement apparatus according to Claim 1, ~~wherein said chromatographic strip further includes a labeling reagent holding layer;~~ wherein said labeling reagent layer has labeling reagent capable of bonding with at least one of said analytes and said binding reagent; and wherein said coloration occurs by bonding reaction between said binding reagent and said labeled reagent.

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Claim 10 (amended): The chromatographic quantitative measurement apparatus according to Claim 1, wherein said chromatographic strip includes a sheet-like solid support and a plurality of wettable materials disposed on said support; wherein said plurality of wettable materials ~~can be~~ is capable of being moistened with said liquid sample; wherein said plurality of wettable materials have, respectively, a test sample loading area, labeling reagent holding layer, at least one reactive layer, and an absorption layer, which are formed parallel on a surface of said support; ~~support, wherein said reactive layer has said plurality of reaction areas;~~ and wherein said liquid sample passes through said test sample loading area, said labeling reagent holding layer, said reactive layer and said absorption layer successively in this order.

Claim 11 (amended): The chromatographic quantitative measurement apparatus according to Claim 10, wherein said plurality of reaction areas have a plurality of spots or dots; and wherein said coloration level measuring means carries out quantitative measurement of the coloration level of said plurality of spots or dots.

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Claim 12 (amended): The chromatographic quantitative measurement apparatus according to Claim 10, wherein said plurality of reaction areas are formed ~~all over~~ so as to cover said reactive layer; and wherein said coloration level measuring ~~mean~~ means carries out quantitative measurement of the coloration level of said reactive layer.

Claim 13 (amended): The chromatographic quantitative measurement apparatus according to Claim 10, wherein said plurality of reaction areas are formed ~~all over~~ so as to cover said reactive layer, wherein a concentration of said binding reagent is consistent ~~all over~~ said reactive layer; and wherein said coloration level measuring means carries out quantitative measurement of the coloration level of said reactive layer.

Claim 14 (original): The chromatographic quantitative measurement apparatus according to Claim 10, wherein said labeling reagent holding layer has labeling reagent capable of forming a bond with at least one selected ~~from~~ said analytes and said binding reagent; and wherein said coloration occurs by bonding reactions between said binding reagent and said labeling reagent.

Claim 15 (amended): A method of chromatographic quantitative measurement to measure a concentration of at least one analyte contained in liquid sample, comprising the steps of:

(a) providing a chromatographic strip ~~that has~~ having one or a plurality of reaction areas ~~immobilizing a binding reagent capable of forming a specific bond with at least one analyte~~ materials comprising a test sample loading area, a labeling reagent holding layer, an absorption layer and a reaction layer, wherein said reaction layer includes a plurality of reaction areas that immobilized a binding reagent capable of forming a specific bond with at least one analyte, and wherein said reaction areas are formed so as to cover said reactive layer or disposed uniformly over said reactive layer in a spot or dot shape;

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(b) moistening said chromatographic strip ~~moistened~~ with liquid sample containing said analytes, and bringing a substance containing said analytes into contact with said binding reagent; and

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(c) measuring the concentration of at least one analyte contained in the liquid sample by measuring the a condition of coloration in at least two reaction areas of said plurality of reaction areas, said coloration ~~being taken on~~ caused by specific bond between said binding reagent and said analytes, said coloration being measured by one or both ~~way of at least one measurement~~ of an optical measurement and an image measurement, and deriving ~~by computation~~ a the concentration in by computation using a numerical expression ~~by subjecting a foregoing measurement result to computation processing.~~

Claim 16 (original): The method of chromatographic quantitative measurement according to Claim 15, wherein said chromatographic strip has wettable materials; wherein said binding reagent is immobilized in said wettable materials; and wherein in said step (b), while said liquid sample passes through said wettable materials, said substance containing said analytes reacts with said binding reagent, and said coloration occurs.

Claim 17 (canceled).

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Claim 18 (amended): The method of chromatographic quantitative measurement according to Claim 15, wherein each of said binding reagents contained in said ~~plurality of~~ reaction areas has identical binding reagent.

Claim 19 (canceled).

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Claim 20 (amended): The method of chromatographic quantitative measurement according to Claim 15, wherein said chromatographic strip has wettable materials; wherein said binding reagent is immobilized in said wettable materials; and wherein a concentration of said

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binding reagent in said wettable materials is identical throughout all of said ~~plurality of~~ reaction areas.

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Claim 21 (amended): The method of chromatographic quantitative measurement according to Claim 15, wherein said chromatographic strip has a sheet-like solid support and a plurality of wettable materials disposed on said support; wherein said plurality of wettable materials ~~can be~~ is capable of being moistened with said liquid sample; wherein said plurality of wettable materials have, respectively, a test sample loading area, a labeling reagent holding layer, at least one reactive layer and an absorption layer that are all disposed parallel on a surface of said support; wherein said reactive layer has said ~~plurality of~~ reaction areas; wherein said liquid sample passes through said test sample loading area, said labeling reagent holding layer, said reactive layer and said absorption layer successively in this order; wherein said labeling reagent holding layer has labeling reagent capable of forming bond with at least one selected from said analytes and said binding reagent; and wherein said coloration occurs by bonding reaction occurring between said binding reagent and said labeling reagent.

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Claim 22 (amended): A chromatographic strip for measuring a concentration of at least one analyte contained in liquid sample by conducting at least one measurement selected from optical measurement and image measurement, ~~comprising:~~ having one or a plurality of wettable materials that ~~can be~~ is capable of being moistened with liquid sample; sample, and binding reagent put in said wettable materials, wherein said wettable materials include a test sample loading area, a labeling reagent holding layer, a reactive layer and an absorption layer, wherein said reactive layer includes a plurality of reaction areas containing a binding reagent; wherein said binding reagent ~~has a nature capable of taking on~~ causes a coloration as a result of specific reaction with substance that contains said ~~analytes, analytes;~~ and wherein said binding reagent is contained ~~in said wettable materials~~ uniformly in said reactive layer or contained in each of said reactive areas formed in a spot or a dot shape over said reactive layer.

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Claim 23 (amended): The chromatographic strip according to Claim 22, wherein said ~~wettable materials has a test sample loading area, a labeling reagent holding layer, at least one reactive layer and an absorption layer; wherein said reactive layer has a plurality of reaction areas, each of said plurality of reaction areas containing said binding reagent; and wherein said liquid sample is allowed to pass through said test sample loading area, said labeling reagent holding layer, said reactive layer and said absorption layer successively in this order.~~

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Claim 24 (amended): The chromatographic strip according to Claim 23, wherein said plurality of reaction areas have a plurality of spots or dots; and wherein coloration level of each of said plurality of spots or dots is allowed to be measured quantitatively by conducting at least one measurement of said optical measurement and said image measurement.

Claim 25 (canceled).

Claim 26 (amended): The chromatographic strip according to Claim 23 22, wherein a concentration of said binding reagent in said wettable materials is consistent throughout all areas of said plurality of reaction areas.

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Claim 27 (amended): The chromatographic strip according to Claim 22, wherein said plurality of wettable materials ~~can be~~ is capable of being moistened with said liquid sample; wherein said plurality of wettable materials have, respectively, a test sample loading area, labeling reagent holding layer, at least one reactive layer and absorption layer that are all formed parallel on a surface of said support; ~~wherein said reactive layer has said plurality of reaction areas; wherein said liquid sample passes through said test sample loading area, said labeling reagent holding layer, said reactive layer and said absorption layer successively in this order; and wherein said labeling reagent holding layer has labeling reagent capable of forming bond with at least one selected from said analytes and said binding reagent, and said coloration occurs by bonding reaction occurring between said binding reagent and said labeling reagent.~~

Claim 28 (canceled).